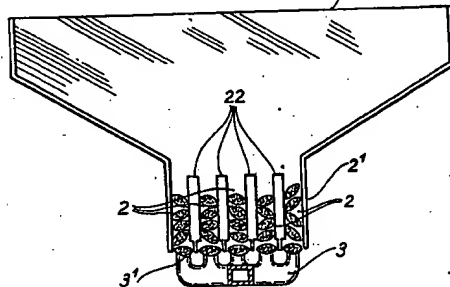
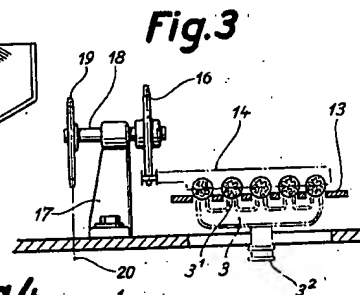
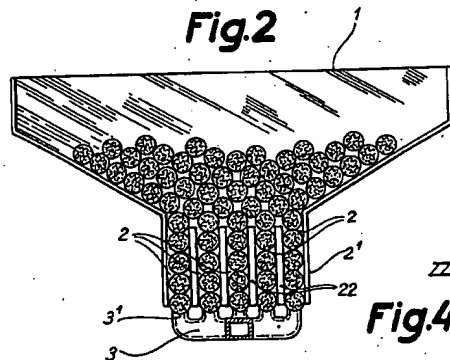
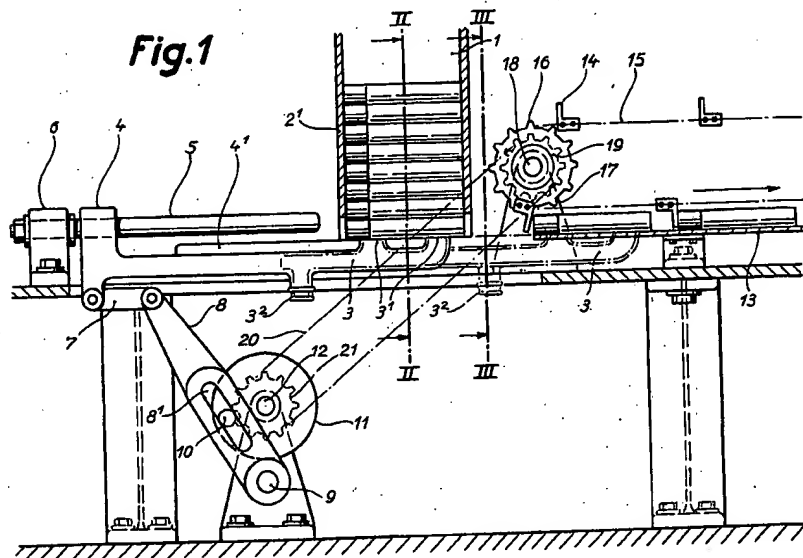


March 5, 1935.

J. NEFF ET AL
 APPARATUS FOR REMOVING THE BOTTOM CIGARETTE GROUP
 FROM A CIGARETTE DISTRIBUTING CHAMBER
 Filed July 23, 1932

1,993,619

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

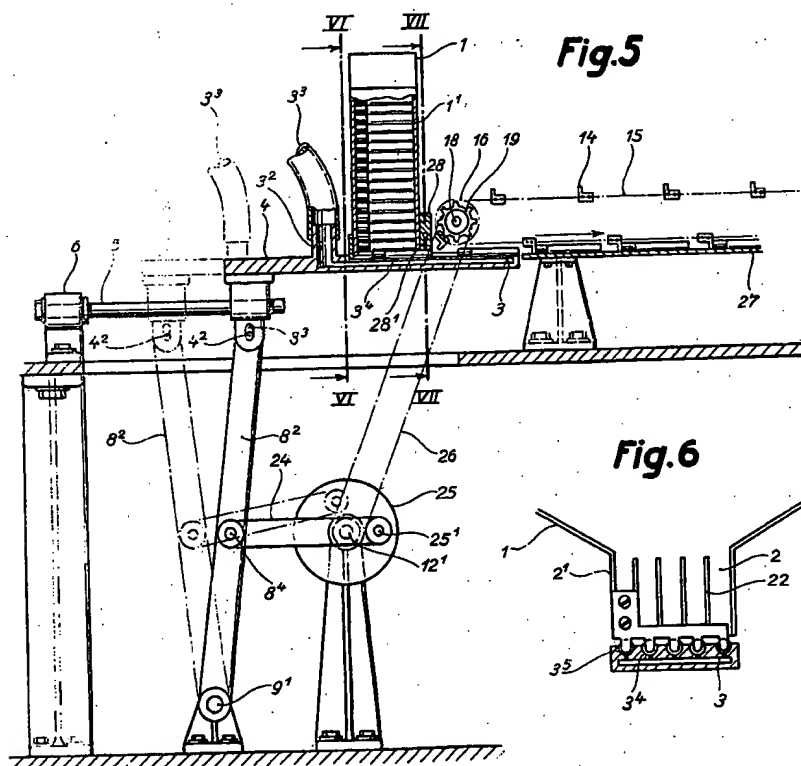


Fig. 5

Fig. 6

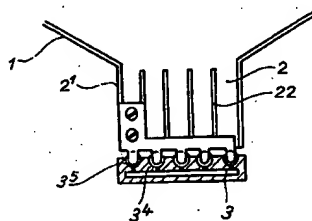
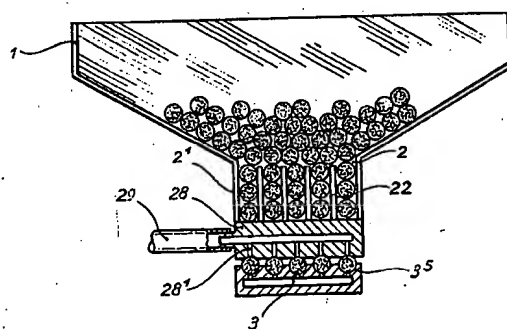


Fig. 7



Inventors:

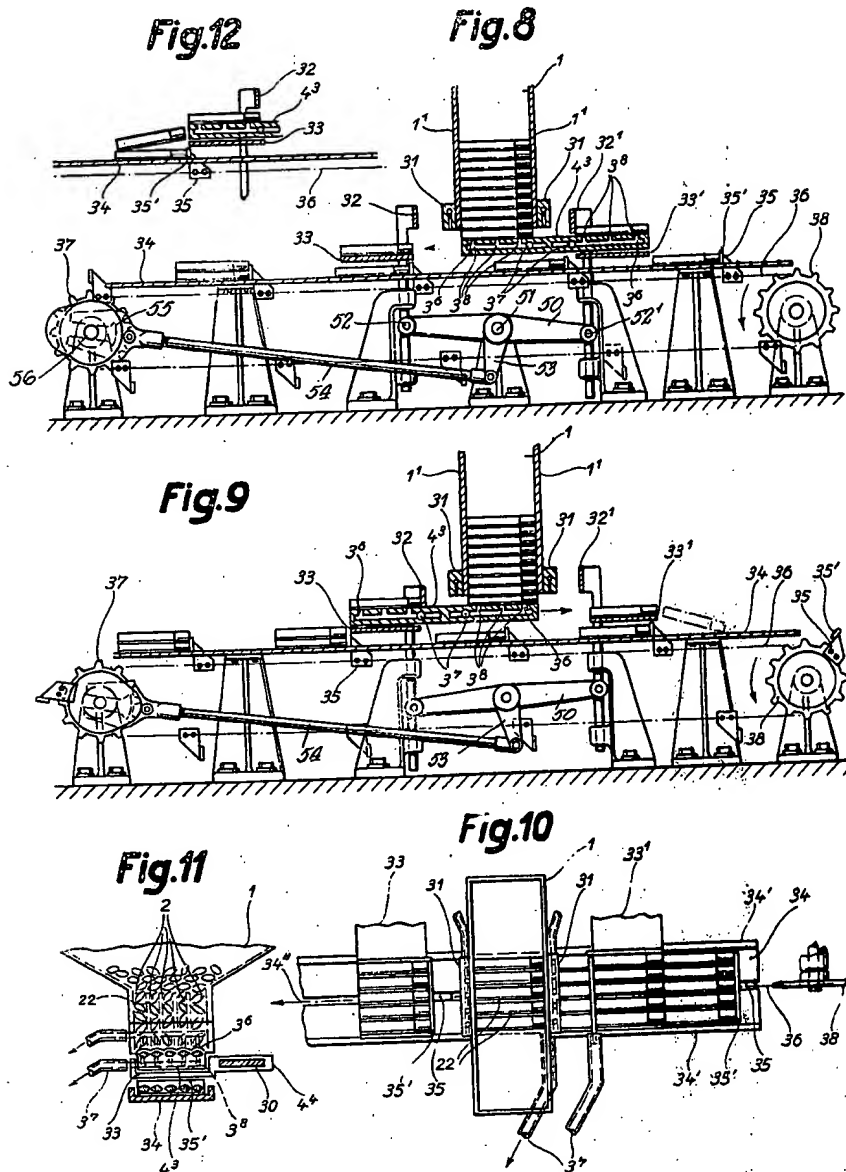
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UNITED STATES PATENT OFFICE

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APPARATUS FOR REMOVING THE BOTTOM
CIGARETTE GROUP FROM A CIGARETTE
DISTRIBUTING CHAMBER

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43 Claims. (Cl. 226—5)

The present invention relates to a removal device for so-called cigarette distributing apparatus wherein the cigarettes are arranged in vertical, parallel rows, and in which all the cigarettes in the row which is at the bottom at the time are removed simultaneously, that is to say in a group. For the removal of the cigarettes a plunger, pusher or the like, which engages in the compartment and thrusts the cigarettes out, has previously been used. As the cigarettes were engaged at their very sensitive ends, this mode of operation always led to damage, the falling out of cigarettes, etc. This is particularly the case when the machines operate at high speed such as is required nowadays.

According to the present invention, as means for conveyance a suction head is used which engages the cigarettes which are at the bottom of the distributing chamber at the time and delivers them to further conveying devices. By this means it is possible to engage the cigarettes at their longitudinal sides which are far less fragile than the ends.

The suction head is preferably fitted to a sliding member and provided with a number of nozzle projections corresponding to the number of the cigarette groups, which projections enter recesses in the conveyer track adjacent to the distributing hopper. This arrangement enables the cigarettes to be deposited on the conveyer track in a simple manner.

Further, the nozzle-projections of the suction head may advantageously be given a cross-section to conform with the cross-section of the cigarette. This enables the suction head to engage with as large a surface of the cigarette as possible.

The sliding member (suction head plate) to which the suction head which removes the group of cigarettes from the distributing hopper is attached, tends to take with it by friction the next group of cigarettes resting on it, and particularly when the sliding member (suction head plate) and also the suction head is provided with grooves for holding the individual cigarettes of each group. It is therefore important that the cigarette group falling down on the sliding member should be prevented from being removed prematurely, even if only slightly, from the distributing chamber.

With this object in view it is advantageous to

provide a checking device by which the second cigarette group from the bottom, which, after the suction head has moved forward, falls down on to the suction head plate, is held fast.

Although the checking effect can be obtained by a suitable step-like arrangement of the suction head sliding member in co-operation with the upper edge of the passage, the checking action can be obtained in a more certain manner by means of an actuated checking device. A suction head has proved to be particularly useful as a checking device.

It is often desirable to place a plurality of groups in a certain position relatively to one another, for instance so that two or more groups arranged in superimposed layers are taken over by the further transport device.

With this object in view on the reciprocating slide which closes the bottom of the distributing chamber of the cigarette distributing hopper, a plurality of suction heads are preferably arranged, each of which grasps the bottom group of cigarettes and delivers it to a device for further transport.

If it is desired to arrange two rows of cigarettes one over the other, according to the present invention the reciprocating slide is provided with two suction heads so that during movement in one direction one group of cigarettes is carried along and delivered to a depositing position, and during movement in the other direction a second group of cigarettes is carried along and delivered to another depositing position situated above or below the former position. In this arrangement pushers are provided on a conveyer belt, conveyer chain or the like, which pushers remove both groups and arrange them one over the other.

Various forms of removal apparatus in accordance with the invention are illustrated in the annexed drawings, in which:—

Fig. 1 is a side view of the apparatus in partial longitudinal section.

Fig. 2 is a cross-section along the line II—II of Fig. 1.

Fig. 3 is a vertical cross-section along the line III—III of Fig. 1.

Fig. 4 is a detailed view.

Fig. 5 is a longitudinal section of a further form of construction.

Fig. 6 is a vertical cross-section along the line VI—VI of Fig. 5.

Fig. 7 is a vertical cross-section along the line VII—VII of Fig. 5.

Fig. 8 is a vertical longitudinal section through a further form of construction.

Fig. 9 illustrates the parts shown in Fig. 8 in another operative position.

Fig. 10 is a plan of the device shown in Fig. 8.

Fig. 11 is a side view of the device shown in Fig. 8.

Fig. 12 is a detailed view.

As can be seen in Figs. 1 and 2, the cigarettes are passed from a hopper 1 into a vertical compartment 2 of the distributing device 2'. The bottom of the compartment 2 co-operates with a suction head 3 which is attached to a sliding member 4. The latter is slidably mounted on a guide rod 5 which is attached to a bracket 6 which is fitted to the machine table. With the sliding member 4 a lever 8, which is mounted on the machine frame at 9, engages by means of a link 7. A crank pin 10 which is attached to a disc 11 engages in a slot 8' in the lever 8. A disc 11 is mounted on a driving shaft 12. The suction head is provided with upwardly projecting members 3', the upper suction surface of which is hollowed out in conformity with the cross-section of the cigarettes. A connection member 3'' is connected by a flexible pipe, not shown in the drawings, with a suction device. A valve sets the suction head in operation in the position indicated by full lines in Fig. 1, whereby the cigarettes which are at the bottom of the compartment 2 at the time are held firmly by the projecting members. Now when the sliding member 4 is displaced to the right as indicated by chain lines in Fig. 1, the suction head 3 withdraws the bottom group of cigarettes from the distributing chamber 2' and delivers it to a conveyer track 13, the left end of which is provided with gaps through which the projection members 3' of the suction head protrude. On the sliding member 4 which carries the suction head 3, a plate 4' is provided which supports the cigarette magazine while the suction head is out of range of the distributing chamber 2. When the suction head 3 has arrived in the position indicated by chain lines in Fig. 1, the suction action is interrupted, the suction head is returned and the group of cigarettes deposited on the conveyer track 13 is engaged by a pusher 14 which thrusts it in the direction indicated by the arrow in Fig. 1. The pushers 14 are mounted on a chain 15, which is passed over the sprocket wheels 16. The sprocket wheels 16 are mounted on a bracket 17 attached to the machine table. On the axle 18 of the sprocket wheel 16 is fixed a further sprocket wheel 19 which is connected by a chain 20 with a sprocket wheel 21 mounted on the driving shaft 12.

In the form of construction shown in Fig. 4, by stepping each side of the ends of the partitions 22 the compartments 2 are so extended that the oval cigarettes in the compartments can lie flat as soon as they arrive in the lowest position. The flatly disposed group of cigarettes which is at the bottom at the time is then seized by the suction head 3. If the cigarettes are not brought into the flat position by gravity (their own weight) they are assisted when the suction action comes into operation.

In the form of construction shown in Figs. 5-7, the plate-shaped suction head 3 is provided with grooves for the individual cigarettes. A flexible

pipe 3³ is connected to the member 3² and is also connected by an adjustable valve with the suction device (exhauster). A lever 8², which is pivotally mounted on the machine frame 9' engages at 42 on the sliding member 4 of the suction head 3. The pin 4² of the sliding member 4 is enclosed by a slot 8³ in the lever 8². The lever 8² engages at 8⁴ with a connecting rod 24, which in its turn is mounted on the crank pin 25' of the crank disc 25. The crank disc 25 is mounted on a shaft 12' which is mounted in the machine frame. The driving shaft 12' is connected by means of a chain 26 with a shaft 18. The shaft 18 drives the sprocket wheel 16 for the conveyer chain 15 on which are mounted pushers 14.

The suction head 3 is rendered effective when it is in the position indicated by chain lines in Fig. 5, whereby the cigarettes which at the time are at the bottom of the compartment 2 are held firmly in the grooves 3⁵ of the suction head 3. If the sliding member 4 is displaced to the right as indicated in Fig. 5, the suction head withdraws the bottom group from the distributing device 1, 2' and passes it to the conveyer track 27. When the suction head is in the position indicated by full lines in Fig. 1, the suction action is interrupted, while the respective pusher 14 on the conveyer chain 15 engages the cigarette group and passes it along the conveyer track 27 in the direction indicated by the arrow, whilst the suction head 3 returns to its initial position indicated by chain lines.

In order, after the removal of one cigarette group from the distributing chamber 2', to prevent the next group of cigarettes which falls down from being carried along by the suction head plate 3⁴ on which it rests, the right-hand side wall 1' of the distributing chamber co-operates with a suction head 28 which is provided with the same number of vertical channels as the number of groups of cigarettes to be removed. In the suction piping 29 connected with the suction head 28 (Fig. 7) is a control valve, not shown in the drawing, which is opened as soon as the cigarette group engaged by the suction head 3 has moved beyond the range of the suction head 28. The next group of cigarettes carried along by the suction head plate 3⁴ by friction is therefore held firmly by the suction head 28 in the position indicated in Fig. 7. In this position, this group is a little outside the chamber 2', namely to the extent necessary to allow the ends of the cigarettes to be correctly engaged by the suction head 28. When the suction head 3 has returned to its initial position, the suction action of the suction head 28 is interrupted, but the suction head 3 is subjected to the action of suction, so that now when the suction head moves outwards again, the group is carried forward.

As can be seen from Fig. 7, the bottom part of the suction head 28, where the vertical channels 28' open, is preferably provided with grooves corresponding to the cross-section of the cigarette, in order to make the action of the suction head 28 more effective.

It is, of course, also possible to arrange the suction head which holds the second cigarette group from the bottom in position, while the bottom group of cigarettes is being removed by the suction head 3, at the side where outlet of the distributing chamber 2' is situated and to operate on the ends of the cigarettes.

In the form of construction shown in Figs. 8-12, the sliding member 4³, which with its lateral projection 4⁴, is adapted to be displaced

on the guide rod 30 in the direction of the longitudinal axis of the cigarettes, has on each side a suction head 3^a. Between the bottom edge of the distributing chamber 2' and the upper surface of the sliding member 4^a there is left a space sufficient to allow a cigarette group to be easily carried off. Each of the two suction heads 3^a is connected with the suction device (exhauster) by means of a movable suction pipe, and a control valve. Each of the two suction heads 3^a has the same number of series of air nozzles 3^b as the number of compartments 2 in the distributing chamber. At the side walls 1' of the distributing chamber are arranged suction heads 31, the function of which is to retain the cigarette group which sinks on to the sliding member, during the movement of the sliding member 4^a.

On either side of the distributing chamber 2' are arranged vertically movable checking bars 32 or 32' in the sphere of action of which are located support surfaces 33 or 33'. The checking bars 32 and 32' are pivotally attached at the points 52 and 52' respectively to the walking beam 50 which is in turn fixedly secured to the stud shaft 51. The stud shaft 51 has fixed thereto a crank 53 by which it is oscillated through the medium of the rod 54 which is in turn reciprocated by the cam mechanism 55 operated by a cam upon the continuously rotating shaft 56. Under the support surfaces 33, 33' a guide track 34 is arranged and this is preferably provided on both sides with side walls 34'. Through a longitudinal slot in the guide track 34' pushers 35, which are attached to a chain 36, protrude. The chain 36 is passed over the sprocket wheels 37 and 38. To the pushers are attached the pusher bars 35' which pass over the inner space between the side walls 34'.

The apparatus operates in the following manner:—

Before the sliding member 4^a moves to the left in the position indicated in Fig. 8, the left-hand suction head 3^a is set into operation, so that the group of cigarettes located in the range of the left-hand group of nozzles 3^b is held firmly by the suction head 3. On the following movement of the sliding member 4^a to the left, the corresponding group of cigarettes is carried along and passed out of the range of the distributing chamber 2'. At the same time the group of cigarettes lying on the right-hand suction head 3^a, which has previously been withdrawn from the distributing chamber 2', is held in place by the checking bar 32'. At the same time the suction pipe 3' leading to the right-hand suction head 3^a is set in operation. Thus the cigarette-group is retained by the checking bar 32' and deposited on the support surface 33' (see Fig. 9). Then the checking bar 32' again moves upwards, while the checking bar 32 is placed behind the cigarette group withdrawn on the left-hand suction head 3^a (see the position in Fig. 9). Then the operation of the two suction pipes 3' is reversed, so that the left-hand suction head 3^a is put out of operation and the right-hand suction head 3^a is put in operation. Now when the sliding member 4^a moves to the right as indicated in Fig. 9, the cigarette group lying on the right-hand suction head 3^a is moved out of the range of the distributing chamber 2', and the checking bar 32 removes the cigarette group from the left suction head which has been set out of operation and deposits it on the support surface 33. When the sliding member 4^a moves to the right as indicated in Fig. 9, the cigarette group lying on the support-

ing surface 33' is thrust downwards to the right on to the conveyer track 34 (cf. the position indicated by chain lines in Fig. 9). The cigarette group deposited on the conveyer track 34 is engaged by the next pusher bar 35' and passed to the left as indicated in Fig. 9.

This cigarette group delivered to the conveyer track 34 forms the bottom layer of cigarettes and is passed to the depositing position on the supporting surface 33. While the sliding member 4^a, on the subsequent movement to the left, withdraws the next group of cigarettes from the distributing chamber 2', the cigarette group held ready on the supporting surface 33 is engaged by the left front end of the sliding member 4^a and deposited by the supporting surface 33 on the cigarette group which is moving past just underneath (Fig. 12). As soon as the second cigarette group has been deposited by the supporting surface 33 on to the first cigarette group, the two superimposed cigarette groups are together carried along by the pusher bar 35'.

The form of construction last described is an arrangement in which a cigarette group consisting of two layers is to be produced. The sliding member 4^a may, of course, also be provided with more than two suction heads, so that at each reciprocating movement it removes a plurality of groups from the distributing chamber 21, so that groups of three or more layers can be produced.

Having thus described the nature of the said invention and the best means we know of carrying the same into practical effect, we claim:—

1. A mechanism for transporting cigarettes comprising a receiving station for cigarettes, a delivery station for said cigarettes and suction means operating upon the sides of said cigarette for transporting the lowermost of said cigarettes from said receiving station to said delivery station.

2. A mechanism for transporting cigarettes comprising a receiving station for cigarettes, means associated with said station for aligning said cigarettes into groups, a delivery station and suction means operating upon the sides of said cigarette for transporting the lowermost groups of cigarettes from said receiving station to said delivery station.

3. A mechanism for transporting cigarettes comprising a receiving station for cigarettes, a delivery station for said cigarettes and reciprocating suction means for removing lowermost cigarettes from said receiving station to said delivery station.

4. A mechanism for transporting cigarettes comprising a receiving station for cigarettes, means associated with said station for aligning said cigarettes into groups, a delivery station for said cigarettes and reciprocating suction means operating upon the sides of said cigarette for removing the lowermost groups of cigarettes from said receiving station to said delivery station.

5. A mechanism for transporting cigarettes comprising a receiving station for cigarettes, a delivery station for cigarettes and suction means for taking the lowermost individual cigarettes by their sides from said receiving station to said delivery station.

6. A mechanism for transporting cigarettes comprising a hopper for receiving cigarettes, means associated with said hopper for aligning said cigarettes into groups, a delivery station, a suction head for taking the lower groups of cigarettes by their sides from said hopper to said delivery station and means for reciprocating said

suction head from said hopper to said delivery station.

7. A mechanism for transporting cigarettes comprising a hopper for receiving cigarettes, a series of partitions in said hopper for dividing said cigarettes into groups and suction means for removing the lowermost cigarettes in said hopper.

8. A mechanism for transporting cigarettes comprising a hopper for receiving the cigarettes, a receiving table, suction means for removing the lowermost cigarette in said hopper to said receiving table and means for transporting said removed cigarette along said receiving table.

9. A mechanism for transporting cigarettes comprising a hopper for receiving the cigarettes, a series of partitions in said hopper for aligning said cigarettes into groups, a suction head, a delivery table, means for reciprocating said suction head from said hopper to said delivery table in order to remove cigarettes from the lowermost part of said hopper to said delivery table and means for transporting said cigarettes along said delivery table.

10. A mechanism for transporting cigarettes comprising a hopper for receiving the cigarettes, a series of partitions in said hopper for aligning said cigarettes into groups, a suction head, a delivery table, means for reciprocating said suction head from said hopper to said delivery table in order to remove cigarettes from the lowermost part of said hopper to said delivery table and endless means for moving said cigarettes along said delivery table.

11. A mechanism for transporting cigarettes comprising a hopper for receiving the cigarettes, a series of partitions in said hopper for aligning said cigarettes into groups, a suction head, a delivery table, means for reciprocating said suction head from said hopper to said delivery table in order to remove cigarettes from the lowermost part of said hopper to said delivery table and an endless chain having pushers thereon for moving said cigarettes along said table.

12. A mechanism for transporting cigarettes comprising a hopper, a suction head having a series of apertures therein and means for reciprocating said suction head underneath said hopper so as to remove the lowermost cigarettes from said hopper.

13. A mechanism for transporting cigarettes comprising a hopper, a series of partitions in said hopper in order to divide the cigarettes in said hopper into aligned groups, a suction head having a series of apertures therein so as to cooperate with the lowermost cigarettes in said hopper and means for reciprocating said suction head so as to remove said cigarettes from said hopper.

14. A mechanism for transporting cigarettes comprising a hopper, a series of partitions in said hopper in order to divide the cigarettes in said hopper into aligned groups, a suction head having a series of apertures therein so as to cooperate with the lowermost cigarettes in said hopper, means for reciprocating said suction head so as to remove said cigarettes from said hopper and means for receiving said cigarettes from said suction head.

15. A mechanism for transporting cigarettes comprising a hopper for said cigarettes, a series of partitions in said hopper dividing said hopper into a series of chambers, a suction head having an aperture located under each one of said chambers and means for reciprocating said suction head so as to remove the lowermost cigarette in each chamber from said hopper.

16. A mechanism for transporting cigarettes comprising a hopper for said cigarettes, a series of partitions in said hopper dividing said hopper into a series of chambers, a suction head having an aperture located under each one of said chambers, means for reciprocating said suction head so as to remove the lowermost cigarette in each chamber from said hopper, a delivery table for receiving such cigarettes from said suction head and means for moving said cigarettes along said receiving means.

17. An apparatus for transporting cigarettes comprising a hopper for receiving cigarettes, a series of partitions in said hopper for aligning said cigarettes in predetermined groups, said partitions being narrow at their lowermost portions so as to define chambers having enlarged portions at the lowermost portions thereof, a suction head and means for reciprocating said suction head immediately below the enlarged portions of said chambers so as to remove cigarettes from said hopper.

18. A mechanism for transporting cigarettes comprising a hopper for receiving said cigarettes, suction means reciprocating underneath said hopper to remove the lowermost cigarettes from said hopper and means for preventing the removal of cigarettes from said hopper disposed above said lowermost cigarettes.

19. A mechanism for transporting cigarettes comprising a hopper for receiving the cigarettes, a pneumatic head for removing the lowermost layer of cigarettes from said hopper, means for reciprocating said pneumatic head underneath said hopper and pneumatic means for preventing the removal from said hopper of cigarettes disposed above said lowermost layer.

20. A mechanism for transporting cigarettes comprising a hopper for cigarettes, a pneumatic head reciprocating underneath said hopper for removing the lowermost layer of cigarettes in said hopper, and pneumatic means disposed adjacent the path of travel of said pneumatic head for preventing the removal of cigarettes by said suction head other than the lowermost layer of cigarettes in said hopper.

21. A mechanism for transporting cigarettes comprising a hopper, a pneumatic head, means for reciprocating said pneumatic head underneath said hopper so as to remove therefrom the lowermost layer of cigarettes and pneumatic means mounted upon said hopper for checking the feed of cigarettes other than the lowermost layer by said pneumatic head.

22. A mechanism for transporting cigarettes comprising a hopper for receiving cigarettes, partitions in said hopper defining a series of chambers for aligning said cigarettes into groups, a suction head having a series of apertures corresponding with said chambers and a suction checking means for preventing the feed of cigarettes other than the lowermost layer also having a series of suction apertures corresponding with said chambers.

23. A mechanism for transporting cigarettes comprising a container for a pile of cigarettes, a reciprocating suction head for removing the lowermost cigarettes from said pile and pneumatic suction means cooperating with said first mentioned means for checking the feed of cigarettes other than the lowermost cigarettes.

24. A mechanism for transporting cigarettes comprising a hopper for cigarettes, pneumatic means for removing the lowermost cigarettes from said hopper, a second pneumatic means for pre-

venting the removal of cigarettes by said first pneumatic means other than the lowermost layer in said hopper and means for receiving the cigarettes from said first mentioned pneumatic means.

25. A mechanism for transporting cigarettes comprising a hopper for cigarettes, pneumatic means for removing the lowermost cigarettes from said hopper, a second pneumatic means for preventing the removal of cigarettes by said first pneumatic means other than the lowermost layer in said hopper, a receiving table for receiving cigarettes from said first mentioned pneumatic means and means associated with said receiving table for moving said cigarettes along said table.

26. A mechanism for transporting cigarettes comprising a hopper for cigarettes, pneumatic means for removing the lowermost cigarettes from said hopper, a second pneumatic means for preventing the removal of cigarettes by said first pneumatic means other than the lowermost layer in said hopper, a receiving table for receiving the cigarettes from said first mentioned pneumatic means and an endless chain having pushers thereon for feeding said cigarettes along said receiving table.

27. A mechanism for transporting cigarettes comprising a reciprocating suction means for removing the lowermost cigarettes from a pile and checking means associated with said suction means for preventing the removal of cigarettes other than the lowermost layer.

28. A mechanism for transporting and aligning cigarettes comprising a hopper for receiving cigarettes, a double suction head reciprocating below said hopper for removing cigarettes from said hopper to each side of said hopper alternately, a receiving platform located upon each side of said hopper and stripping means associated with each platform for removing the cigarettes from said suction means to said platforms.

29. A mechanism for transporting and aligning cigarettes comprising a hopper for the cigarettes, a member having a plurality of suction heads reciprocating below said hopper, a platform for receiving cigarettes from each suction head and stripping means associated with each platform for removing the cigarettes from the corresponding suction head to said platform.

30. A mechanism for transporting and aligning cigarettes comprising a hopper, a member having a plurality of suction heads reciprocating below said hopper for removing the lowermost layers of said cigarettes in said hopper, a platform for receiving cigarettes from each suction head, means cooperating with said suction head for removing cigarettes from said suction heads to said platforms, a receiving table for receiving said cigarettes from said platforms and means for feeding said cigarettes from said platform to said table.

31. A mechanism for transporting and aligning cigarettes comprising a hopper, a member having a plurality of suction heads reciprocating below said hopper for removing the lowermost layers of said cigarettes in said hopper, a platform for receiving cigarettes from each suction head, means cooperating with said suction head for removing cigarettes from said suction heads to said platforms, a receiving table for receiving said cigarettes from said platforms and means for removing said cigarettes from said platforms to said receiving table and aligning them in superposed position.

32. A mechanism for transporting and aligning cigarettes comprising a hopper for cigarettes,

a plurality of suction heads cooperating with said hopper for removing the lowermost cigarettes therefrom, checking means for preventing the removal of cigarettes other than the lowermost layer to each suction head, means for removing cigarettes from said suction heads and means for superposing said cigarettes after being removed from said suction heads.

33. A mechanism for transporting and aligning cigarettes comprising a hopper, means associated with said hopper for aligning said cigarettes into layers of predetermined number, a plurality of suction heads for removing individual layers of cigarettes from said hopper, means preventing the removal of more than a single layer by each suction head, means for removing the cigarettes from each suction head and means for superposing layers of cigarettes upon one another.

34. A mechanism for transporting and aligning cigarettes comprising a hopper, means for aligning the cigarettes in said hopper into layers, a plurality of suction heads cooperating with said hopper for removing the lowermost layers of cigarettes, pneumatic means cooperating with said suction heads for preventing the removal from said hopper by each suction head of other cigarettes than those constituting the lowermost layer and means for superposing the removed layers of cigarettes.

35. A mechanism for transporting and aligning cigarettes comprising a hopper for cigarettes, means for removing the lowermost layers of cigarettes in said hopper alternately to each side thereof and means for superposing said removed layers of cigarettes.

36. A mechanism for transporting and aligning cigarettes comprising a hopper for cigarettes, means associated with said hopper for aligning said cigarettes into layers, means operating upon the sides of said cigarettes for removing said layers of cigarettes from said hopper and means for superposing said removed layers.

37. A mechanism for transporting and aligning cigarettes comprising a hopper, means for removing the lowermost layers of cigarettes from said hopper to alternate sides thereof, a platform upon each side of said hopper for receiving said removed cigarettes, a receiving table located under said platform and means for superposing said removed cigarettes upon said receiving table including said removing means.

38. A mechanism for transporting cigarettes comprising a hopper for receiving cigarettes, a reciprocating member closing the bottom of said hopper and a suction head carried by said reciprocating member for removing cigarettes from said hopper.

39. A method of transporting cigarettes comprising arranging the cigarettes in a pile in layers and then moving the lowermost of said layers from said pile by suction means applied to the sides of said cigarettes.

40. A mechanism for superposing cigarettes comprising a container for holding said cigarettes, a delivery station and suction means for removing said cigarettes from the lower part of said container and superposing the same upon said delivery station.

41. A mechanism for superposing cigarettes comprising a container for holding said cigarettes, a delivery station and reciprocating suction means for removing said cigarettes from the lower part of said container and superposing the same upon said delivery station.

42. A mechanism for superposing cigarettes comprising a hopper for cigarettes, suction means for removing the lower cigarettes in said hopper and means cooperating with said removing means for superposing said removed cigarettes.
- 5 43. A mechanism for superposing cigarettes comprising a hopper for cigarettes, a suction head for removing said cigarettes from the lower part of said hopper in groups and means cooperating with said suction head whereby said groups of cigarettes may be placed in superposed position.

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